

Remarks

Reconsideration is requested.

The Examiner has raised formal objections to claims 2 and 10. With the present amendments to the claims, these objections have been overcome.

Claims 1-5, 7-11 and 13 has been rejected under 35 U.S.C. 102(b) as being anticipated by Banerjee (U.S. Patent No. 6,307,630).

Claims 5, 12 and 14 have been rejected under 35 U.S.C. 103(a) as being unpatentable over the Banerjee patent.

Applicant has amended the claims to more specifically recite the novel and unique features of the present invention which involve the use of a laser light source in a monitoring system which measures the relative standard deviation of a parameter of the sample such as laser turbidity or laser particle counting. This monitoring system is useful in predicting filtration breakthrough at a time earlier than is possible with a conventional turbidimeter or particle counter apparatus. The monitoring system of the present invention, as described in the specification (e.g. paragraphs 0043-0053), is able to use raw data generated by apparatus such as described in the Banerjee patent.

The Banerjee patent does not describe or suggest a monitoring system in which the relative standard deviation of a

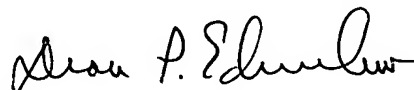
parameter (such as turbidity or particle counting) is determined and used to predict a filter breakthrough. The Banerjee patent does not even allude to such a possibility. Indeed, the Banerjee patent does not provide any description or suggestion of applicant's claimed invention. Rather, the Banerjee invention is limited to apparatus for measuring turbidity in liquid samples.

Applicant's monitoring system is of analytical and qualitative use. The laser-based technologies (such as those described in the Banerjee patent) can produce raw signals that represent the net aggregate signal of the particulate matter within a sample stream. Application of the algorithm then provides a complementary measurement known as the relative standard deviation (RSD) that serves as a precursor to a fine integrity loss within a given filtration system. The monitoring system analyzes the nature of signal movement within the gross change itself, and within the data, will ultimately produce the analytical measurement that is different than the gross measurement. The monitoring system processes the raw signals to generate a different measurement that shows the rate of change within the signal, which is then treated independently, i.e. the RSD. Thus, the monitoring system of the invention uses the RSD of a measured parameter (such as turbidity or particle counting) to identify filter breakthrough. The Banerjee patent does not describe or suggest the invention claimed by applicant.

The reference to prior art in applicant's specification was for the purpose of identifying the types of turbidity and particle counter apparatus which may be used in the monitoring system of this invention. Applicant is not aware of any prior art that describes the present invention for sensitivity enhancement of a laser turbidity or particle counter measurement for use in detection of an integrity breach.

In view of the foregoing amendments to the claims, and the foregoing remarks, applicant submits that all of the rejections of the claims have been overcome. Reconsideration and favorable action are courteously solicited.

Respectfully submitted,



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SIGNED Dean P. Edmundson

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